



**TECHNICAL REPORT ON A SUBSIDENCE CLAIM**



Ms J Rickards  
22 Ivor Street  
London  
NW1 9PJ



Prepared for



**SUBSIDENCE CLAIM**

DATE 30th December 2019



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**Site Plan** **This plan is Not to Scale**

This plan is diagrammatic only and has been prepared to illustrate the general position of the property and its relationship to nearby trees etc. The boundaries are not accurate, and do not infer or confer any rights of ownership or right of way. Position of utilities is only indicative and contractors must satisfy themselves regarding actual location before commencing works.



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**Key:**

	Tree: Deciduous		Tree: Conifer		Shrub
	Hedge		Area of Damage		Bore Hole
	Trial Hole		Trial & Bore Hole		Level Monitoring
	Rain Water Manhole		Rain Water Gulley		Rain Water Pipe
	Waste Water Manhole		Waste Water Gulley		Toilet Pipe
	Rain Water Drain		Waste Water Drain		Electricity Cable
	Water Supply Pipe		Gas Supply Pipe		Incoming Gas Pipe
	Incoming Water		Incoming Electrics		

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**INTRODUCTION**

We have been asked by RSA - MORE TH>N to comment on movement that has taken place to the above property. We are required to briefly describe the damage, establish a likely cause and list any remedial measures that may be needed.

Our report should not be used in the same way as a pre-purchase survey. It has been prepared specifically in connection with the present insurance claim and should not be relied on as a statement of structural adequacy. It does not deal with the general condition of the building, decorations, timber rot or infestation etc.

The report is made on behalf of Crawford & Company and by receiving the report and acting on it, the client - or any third party relying on it - accepts that no individual is personally liable in contract, tort or breach of Statutory duty. Where works address repairs **that are not covered** by the insurance policy we recommend that you seek professional advice on the repair methodology and whether the works will involve the Construction (Design & Management) Regulations 2015. Compliance with these Regulations is compulsory; failure to do so may result in prosecution. We have not taken account of the regulations and you must take appropriate advice.

We have not commented on any part of the building that is covered or inaccessible.

**TECHNICAL CIRCUMSTANCES**

A single storey extension which wraps around the original rear addition was added to the rear of the property in 2013. Some minor settlement cracking was noted shortly after construction however this was not of major concern. Over August / September 2019 Ms Rickards noted cracking appearing around the junction of the original rear addition and main front section of the property. Insurers were notified of a potential claim.

**PROPERTY**

The risk address is a three storey mid-terrace house of traditional construction with brick walls surmounted by a mansard slated roof.

**HISTORY & TIMESCALE**

We are proceeding with removal of the insured's tree to the rear. The property is located in a conservation area so an application will need to be made to the council in the first instance.

Date of Construction .....	Circa 1850
Purchased .....	2007
Policy Inception Date.....	02/11/2015
Damage First Noticed .....	August 2019
Claim Notified to Insurer.....	14/10/2019
Date of our Inspection.....	18/12/2019
Issue of Report.....	30/12/2019
Anticipated Completion of Claim .....	October 2020

**TOPOGRAPHY**

The property occupies a reasonably level site with no unusual or adverse topographic features.



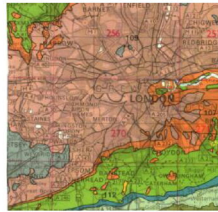
## GEOLOGY

Reference to the 1:625,000 scale British Geological Survey Map (solid edition) OS Tile number TQNW suggests the underlying geology to be London Clay.

London Clays are marine deposits characterised by their silty, sandy composition. They are typically stiff, dark or bluish grey, weathered dark to mid-brown superficially with fine particle size (less than 0.002mm). Tomlinson<sup>1</sup> describes it as a 'fat' clay with high loadbearing characteristics due to pre-consolidation pressures in its geological history.

The upper horizon is often encountered at shallow depth, sometimes just below ground level. They have high shrink/swell potentials<sup>2,3</sup> and can be troublesome in the presence of vegetation.

The solid geology appears to outcrop in this location, although we cannot rule out the presence of superficial deposits at shallow depth.



Geology. Reproduced with consent of The British Geological Survey at Keyworth.  
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## VEGETATION

There are several trees and shrubs nearby, some with roots that may extend beneath the house foundations. The following are of particular interest:-

Type	Height	Distance	Ownership
Honey Locust	11 m	7 m	Owners

See sketch. Tree roots can be troublesome in cohesive (clay) soils because they can induce volumetric change. They are rarely troublesome in non-cohesive soils (sands and gravels etc.) other than when they enter drains, in which case blockages can ensue.

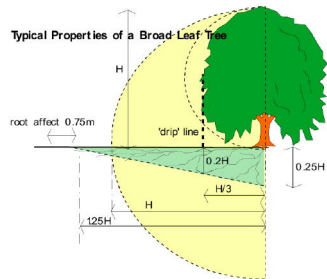
Broadleaf trees typically have wider spreading roots and higher water demands than coniferous species and many are better adapted to growing on heavy clay soils. Some are capable of sprouting from cut stumps or bare wood and most will tolerate pruning better than conifers.

<sup>1</sup> Tomlinson M.J. (1991) "Foundations Design & Construction" Longman Scientific Publishing.

<sup>2</sup> B.S. 5930 (1981) "Site Investigations"

<sup>3</sup> Driscoll R. (1983) "Influence of Vegetation on Clays" Geotechnique. Vol 33.

<sup>3</sup> Table 1, Chapter 4.2, Para. 2.3 of N.H.B.C. Standards, 1986.



Typical proportions of a broadleaf tree. Note the potential root zone. It must be noted that every tree is different, and the root zone will vary with soil type, health of the tree and climatic conditions.

However heavy pruning of any tree should be avoided if possible, as it stimulates the formation of dense masses of weakly attached new branches which can become dangerous if not re-cut periodically to keep their weight down.



**OBSERVATIONS**

The movement to the rear addition is the focal point of the Insured's concerns.

The following is an abbreviated description. Photographs accompanying this report illustrate the nature and extent of the problem.

**INTERNAL**

Cracking in 2nd floor rear bedroom on rear addition junction



Cracking in kitchen on rear addition junction

**Kitchen** - 3mm horizontal crack above door to hall on rear addition junction, 1mm vertical crack down left hand flank on boxing junction, door to hallway catching on frame, unrelated water ingress through glass roof on rear left hand corner.

**Hallway** - 1mm vertical crack above understairs cupboard door continues along wall / ceiling junction above door to kitchen.

**Landing** - Cracking to underside of stairs at 1st floor level, cracking along stairs stringer at top of stairs to 1st floor.

**1st Floor Bathroom** - Cracking to ceiling along right hand flank, door is sticking in frame, historic movement noted to floor by door to landing.

**1st Floor Rear Bedroom** - 3mm vertical crack down rear right hand corner, 1mm vertical crack below left hand side of window, 8mm gap between floor and skirting on rear wall.

**2nd Floor Landing** - 3mm tapering cracking around rear bedroom door frame, cracking along stair stringer on rear addition junction to stairs to loft.

**2nd Floor Rear Bedroom and En-Suite** - 6mm tapering separation around wall / ceiling junction on rear addition junction, wall / ceiling and vertical junction cracking around en-suite partition.

**Loft Rooms** - Cracking up stair stringer, cracking around rear velux window on stairs - Not subsidence related damage.

**EXTERNAL**

No external damage was noted at the time of inspection.

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**CATEGORY**

In structural terms the damage falls into Category 3 of Table 1, Building Research Establishment<sup>4</sup> Digest 251, which describes it as "moderate".

Category 0	"negligible"	< 0.1mm
Category 1	"very slight"	0.1 - 1mm
Category 2	"slight"	>1 but < 5mm
Category 3	"moderate"	>5 but < 15mm
Category 4	"severe"	>15 but < 25mm
Category 5	"very severe"	>25 mm

**Extract from Table 1, B.R.E. Digest 251**  
Classification of damage based on crack widths.

**DISCUSSION**

The pattern and nature of the cracks is indicative of an episode of subsidence affecting the original part of the rear addition. The cause of movement appears to be clay shrinkage.

The timing of the event, the presence of shrinkable clay beneath the foundations and the proximity of vegetation where there is damage indicates the shrinkage to be root induced. This is a commonly encountered problem and probably accounts for around 70% of subsidence claims notified to insurers.

Fortunately, the cause of the problem (dehydration) is reversible. Clay soils will re-hydrate in the winter months, causing the clays to swell and the cracks to close. Provided the cause of movement is dealt with (in this case, vegetation) there should not be a recurrence of movement.

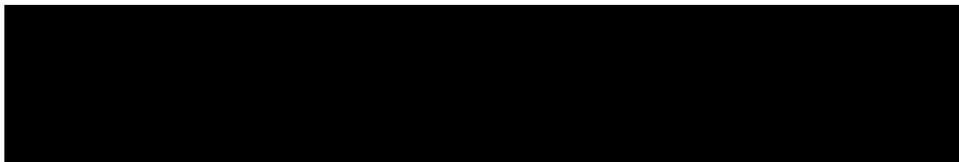
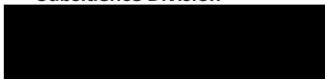
**RECOMMENDATIONS**

The cause of the movement needs to be dealt with first. We have completed a Soil Risk Analysis (VISCAT Assessment) and we are satisfied that your Honey Locust tree can be removed.

We recommend the tree works and will undertake statutory checks for Preservation Orders or whether the tree is in a Conservation Area. The cost of the actual tree work however is not covered as part of the claim.

Provided the tree management works are completed expeditiously, consideration may then be given to carrying out the appropriate repairs to the property.

**Matt Deller BSc (Hons) MCIQB Dip CII**  
**Subsidence Division**





**PHOTOGRAPHS**



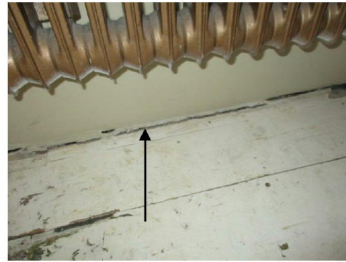
Cracking to glazed roof in kitchen around rear addition junction



Cracking in hallway



Cracking in 1st floor rear bedroom around rear addition junction



Gap between skirting and rear wall in 1st floor rear bedroom



Cracking on 2nd floor landing on rear addition junction



Cracking in 2nd floor rear bedroom ensuite on rear addition junction







View of insured's Honey Locust tree to rear

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